Technical Attachment

Plans for Replacement of GOES-8 by GOES-12

(Ed. note: The following is based on information provided by Tom Renkevens, NESDIS Satellite Services Division. For full details and more information about the NESDIS Satellite Services Division, please go to http://www.ssd.noaa.gov/.)

The GOES-12 satellite, already in orbit, is scheduled to replace GOES-8 as the GOES-East operational spacecraft on March 31, 2003. The following provides initial information on the planned transition from GOES-8 to GOES-12.

One of the factors which limits the useful lifetime of the geostationary satellites is depletion of the onboard fuel which is used to maneuver the spacecraft and keep them within north/south inclination specifications, relative to the equator. That is one reason why GOES-8, which was launched April 13, 1994, is being retired from operations. The GOES-M satellite (which became GOES-12 after being successfully launched in July 2001) carries sensors that have significant differences from those on the GOES-8 through GOES-11 series of satellites. The 6.7 micron water vapor channel resolution improves from 8 km to 4 km, and the 12.0 micron band at 4km was replaced with a 13.3 micron band at 8km on GOES-12. (Additional information can be found at: http://www.osd.noaa.gov/Gvar/gvardownload.htm.) These differences may require adjustments to ground station equipment. Plans are being developed to minimize disruptions to all users.

Here is a brief summary of upcoming events related to the changeover of satellites:

- January 9, 2003 — GOES-12 taken out of storage.
- January 17 — GOES-12 begins eastward drift of 0.4 deg/day from 110W toward 75W.
- January 20 — Turn on Solar X-Ray Imager and being imaging.
- January 24 — Provide imagery from 01/24/03 through 03/31/03 for advanced users such as the Satellite Services Division, to acquire data and re-validate products. Affected products from NESDIS will be re-validated during this time.

- March 31 — As GOES-12 arrives at 81W, GOES-12 data are flowed through GOES-8 communication links, thus GOES-12 data are operational, but received through GOES-8 downlink. Users point to GOES-8 to receive GOES-12 data. Though GOES-12 will be operational, if significant problems occur GOES-8 data can be reestablished quickly.

  As GOES-12 is within 1 deg of GOES-8, turn off GOES-8 signal and acquire GOES-12 data directly from GOES-12, not GOES-8. Users should not need to repoint their antenna, as the two satellites are very close.

- April 22 Switch ancillary communication services (DCS, WEFAX, EMWIN, SAR) from GOES-8 to GOES-12.

This procedure provides for a very rapid fall-back to GOES-8 for operational products, should a significant problem arise. However, simultaneous imaging of both GOES-8 and GOES-12 is not possible within about 6 deg collocation. During the period that GOES-12 is operational while drifting toward 75W the images will reflect an approximate 0.4 deg/day drift. This may be accommodated by periodically updating the reference longitude.

Periodic updates will be provided when new information becomes available.